

EXERCISE APPARATUS

BACKGROUND OF THE INVENTION

The present invention relates generally to exercise equipment and more particularly to an exercise equipment which utilizes a user's own weight as a resistant force.

The increased public interest in fitness and health has resulted in a great variety of exercise equipment available on the market. Each type of exercise equipment has its own specific function because it is designed to train one or more parts of the user's body. Most exercise equipment provides adjustable loads, such as weights, springs, or hydraulic and pneumatic cylinders to provide a force for the user to work against. Most prior art exercise devices are also large and bulky and require a significant amount of floor space. Moreover, prior art equipment is typically manufactured with numerous moving parts formed of tubular steel or the like and much of the equipment is designed for use in commercial fitness centers. To meet a demand for more convenient exercise equipment, manufacturer's have designed smaller units for residential use. These prior art devices are more convenient than the larger commercial devices but are frequently unattractive and too large to be placed in living areas of a home.

An object of the present invention is to provide a foldable exercise apparatus which utilizes the user's own weight as a load in training the user's muscles without any external loads being required which simplifies the structure of the exercise device. The exercise device of the present invention utilizes a frame which may be a folding A-frame which has a

1 generally U-shaped swing portion movably attached
2 thereto and having a seat thereon for a user. A pair
3 of arms are attached to the U-shaped swing portion
4 along the hinge axis so that a person can grip the
5 handles on the arms and push and pull to move the U-
6 shaped portion seat and user occupying the seat. A
7 leg exerciser has a leg bar attached to the frame and
8 positioned for the user to push the swing portion and
9 the user to move the swing portion with his legs.

10 Prior art U.S. Patents for exercise devices can
11 be seen in the Lin Patent No. 5,674,161 for an
12 exerciser utilizing a user's own weight as a load and
13 has a seat which can be raised and lowered with the
14 arms and legs pushing and pulling on handles or foot
15 pedals. The Curtis exercise apparatus No. 5,470,298
16 is an exercise apparatus formed in a chair but with an
17 arm exercise and leg exercise station. The Moon U.S.
18 Patent No. 5,595,558 is an exerciser of the rower-type
19 while the Bjornsti U.S. Patent No. 5,695,438 is a
20 training apparatus having a frame with wheels for
21 supporting a user in the standing position while he
22 moves the wheels and thus partially utilizes the
23 user's weight for training. The Olschansky et al.
24 Patent No. 5,722,917 is a displaceable seat exercise
25 system and allows the user to exercise the arms and
26 legs. The legs are exercised by rotary displacement
27 of a seat relative to a foot support so that a
28 resistive force is formed by a combination of the
29 user's own body weight and a resistance element. The
30 Chen Patent No. 5,899,836 is an exerciser for pulling
31 and stepping exercises and has provisions for moving
32 the seat up and down. The Smith U.S. Patent No.
33 4,569,517 and the Hayes Patent No. 2,729,271 and the

1 White Patent No. 281,216 each show swing type
2 exercisers.

3 In contrast to these devices, the present
4 exercise apparatus may be foldable from a simple A-
5 frame structure and utilizes the user's own weight as
6 the resistive force for the user to exercise his arms
7 and legs and simplifies the operation and size of the
8 exercise equipment.

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10 SUMMARY OF THE INVENTION

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12 An exercise apparatus utilizes a user's own
13 weight as a load and has a folding A-frame formed from
14 two frame sections hinged together and being foldable
15 on the hinge between a storage position and an
16 operative position. A generally U-shaped swing
17 portion is movably attached to one of the frame
18 sections and has a seat attached thereto. The seat
19 may have back and foot supports. A pair of arms each
20 having a handle are attached to a generally U-shaped
21 swing portion and extend therefrom so that a person
22 sitting in the generally U-shaped swing portion seat
23 and gripping and moving the handles can move the U-
24 shaped swing portion and the person sitting therein
25 relative to the A-frame to thereby exercise a person's
26 arms. A leg exerciser is attached to one of the frame
27 sections and positioned for a person seated in the
28 seat to exercise the legs by pushing on a leg exercise
29 bar with the feet to move the person sitting in the U-
30 shaped swing portion so that a folding arm and leg
31 exerciser apparatus utilizes a person's own mass for
32 exercising the arms and legs. The folding frame
33 sections can have a locking link to lock them in an

1 open position. The generally U-shaped swing portion
2 is movably attached to one frame section at the end
3 thereof and the other frame section is hinged to the
4 one frame section. A pair of arms are adjustable
5 attached to the generally U-shaped swing portion to
6 thereby vary the position of the handles relative to
7 the user occupying the seat. An alternate embodiment
8 has a frame having a base frame portion and an angled
9 upright frame portion for supporting a generally U-
10 shaped swing portion movably attached to the upright
11 frame section but otherwise operates in the same
12 manner.

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14 BRIEF DESCRIPTION OF THE DRAWINGS

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16 Other objects, features, and advantages of the
17 present invention will be apparent from the written
18 description and the drawings in which:

19 Figure 1 is a perspective view of an exerciser in
20 accordance with the present invention in an operative
21 position;

22 Figure 2 is a side elevation of the exerciser of
23 Figure 1;

24 Figure 3 is a side elevation of the exerciser of
25 Figures 1 and 2 in a folded position; and

26 Figure 4 is a perspective view of an alternate
27 embodiment of an exerciser in accordance with the
28 present invention.

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30 DESCRIPTION OF THE PREFERRED EMBODIMENTS

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32 Referring to the drawings of Figures 1-3, an
33 exercise apparatus 10 is illustrated of the type using

1 a user's own weight as a load has an A-frame shaped
2 frame having frame sections 11 and 12 hinged together
3 with a hinge 13. The frame sections 11 and 12 are
4 both generally U-shaped frame sections. Frame section
5 12 ends 14 are connected to the hinge 13 which is in
6 the form of a strap 15 having a hinge pin 16 mounted
7 between the ends of the arms 17 of the frame section
8 11. When the A-frame is in an open position, as shown
9 in Figures 1 and 2, a link member 18 locks the frame
10 sections 11 and 12 together in an open position. One
11 end of the link 18 is pinned with a pin 20 to the
12 frame while the other end has a slot 21 which swings
13 onto a pin positioned on the A-frame section 11.
14 Swinging the arm 18 on the pin 20, unlocks the frame
15 sections 11 and 12, and allows the A-frame section to
16 be folded, as seen in Figure 13.

17 A generally U-shaped swing portion 22 is formed
18 of a tubular material and is hinged to the frame
19 section 11 ends with a hinge 23 which includes a
20 sleeve 24 rotating on a bar attached to the frame
21 section 17. The U-shaped swing portion 22 has a seat
22 25 attached to the bottom of the U, which seat 25 has
23 a backrest 26 attached thereto and a footrest 27
24 attached to the bottom thereof. Footrest 27 is
25 removably attached to a yoke 28 and locking pin 30.
26 The hinge 23 sleeve portion 24 on each side of the U-
27 shaped swing portion 22 has a disc 31 attached thereto
28 having a plurality of apertures 32 therein spaced
29 around the periphery thereof.

30 An arm supporting bracket 33 supports an arm 34
31 and is attached to rotate on the bar 35. Each bracket
32 33 is locked to the locking disc 31 with a spring
33 loaded pin 36 which can lock into any one of the

1 plurality of apertures 32 in a disc 31 to position the
2 extending arm 34 in different positions as desired.
3 Each arm 34 has a handle 37 attached thereto. In this
4 manner, a person sitting on the seat 25 on the U-
5 shaped swing portion 22 can adjust the handle arms 34
6 to any position desired by rotating the arm and
7 locking it to the disc 31 with the locking pin 36.
8 The handle can then be pulled on to move the U-shaped
9 swing portion 22 back and forth by pushing and pulling
10 on the handles 37 while the user is sitting on the
11 seat 25. Thus, the user pushes the swing portion 22
12 against the user's own weight.

13 The A-frame section 12 has a leg exerciser
14 portion 38 attached thereto which includes a foot bar
15 40 which may have a disc 41 attached to each end, each
16 disc 41 has a plurality of apertures 42 therein around
17 the periphery thereof and which is attached to the
18 frame section 12 with a bar 43 and which is further
19 attached to the foot bar 40. The leg exerciser 38 can
20 be adjusted for position so that a person sitting in
21 the seat 25 may remove his feet from the footrest 27
22 and place them on the leg exerciser 38 bar 40 and then
23 use his legs to push the U-shaped swing portion 22
24 with the user sitting therein back and forth to
25 exercise the legs. The A-frame section 12 is made of
26 a U-shaped tubing 44 and has a square channel member
27 45 therein with an aperture 46 for sliding an
28 attachment thereinto so that an additional piece of
29 exercise equipment can be attached thereto for
30 exercising the legs, such as a peddling exerciser.

31 The exerciser 10 of the present invention
32 advantageously is lightweight and simplified by the
33 user using his own weight as a resistive mass. It may

1 be folded, as seen in Figure 3, from the open position
2 of Figures 1 and 2 to the folded position of Figure 3
3 by simply releasing the locking links 18, folding the
4 A-frame sections 11 and 12 together. This allows the
5 seat 25, having the foot support 27 and back support
6 26 folded, to fold. The arms are rotated to allow for
7 one convenient folded package which can be easily
8 carried by one person to any location desired or
9 packed within a vehicle for easy transportation. It
10 also allows the exerciser to be packed for shipping
11 and storage.

12 Turning to Figure 4, an alternate embodiment 50
13 of the exerciser of Figure 1-3 is illustrated having
14 the identical U-shaped swing portion 22 having the
15 seat 25 mounted thereon and having the foot support 27
16 and back support 26. The exerciser 50 also has the
17 arms 34 with the handles 37 mounted with the bracket
18 33 mounted to a rod 35 and connected to the disc 31
19 having apertures 32 and a locking pin 36. In this
20 embodiment, the U-shaped swing portion 22 is mounted
21 to a fixed A-frame 51 which has been turned on its
22 side to provide for a base frame portion 52 and an
23 angled upright frame portion 53. The frame base
24 portion 52 has a foot exerciser 54 mounted in a square
25 channel 55 mounted in the front frame member 56 of the
26 base frame 52. The foot exerciser 54 has a foot
27 supporting member 57 forming a tee on the member 58
28 which is attached to a square channel-like member 60
29 which slides and is locked into the square channel 55
30 to hold it in position. A locking pin 61 passing
31 through the locking channel sleeve 55 allows the
32 locking of the foot rest 57 in place. The frame 51 in
33 this embodiment is formed from a channel rather than

1 a tubular frame and may be made of a metal, such as
2 steel. Similarly, the frame of Figures 1-3 can be
3 made of a steel tubing or any other material desired
4 that is sufficiently strong to support the user.

5 It should be clear at this time that an exerciser
6 has been provided which allows the user to exercise
7 the arms and the legs and which utilizes the user's
8 own weight as a load to thereby simplify the exerciser
9 and which can be easily moved between positions and
10 easily folded for storage or shipping. It can be
11 rapidly set up for use in the home. However, the
12 present invention should not be considered as limited
13 to the forms shown which are to be considered
14 illustrative rather than restrictive.